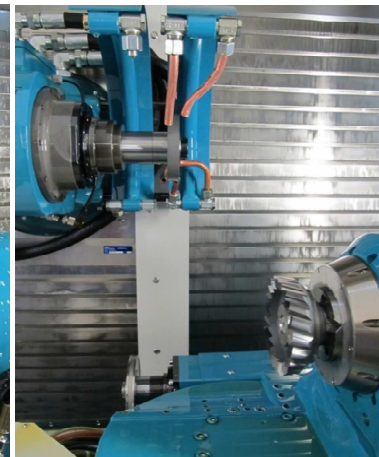
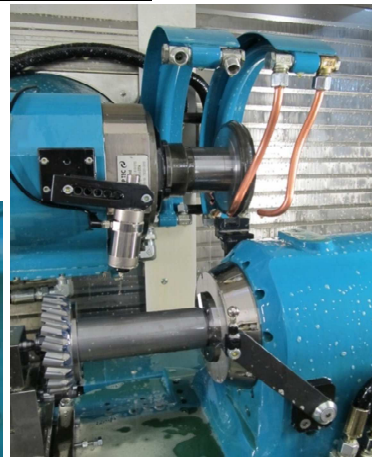
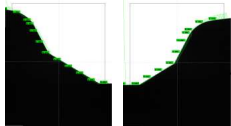


Carbide Shaper-Cutter Ø114 Z21

A12-230

The key-process in grinding of carbide shaper cutters is the dressing of the diamond wheel. In order to ensure the precise form a test grind of a blade ("razorblade" process) is done and separately checked. Corrections can be applied, either to the wheel dxf or the dxf of the dogbone-dresser. The linear axis of the machine are predestinated for the involute grinding movements required when grinding down successively the diameter of the shaper cutter.



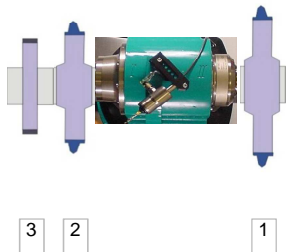
1. Cycletime for Production

Workpiece: Pitch-Ø108 mm, Helix 20°, TopRake 7°, Lifetime 17 mm Material CARBIDE															
Operations	Probe	Dress	Razorblade	Rough Profile	pregr. Profile	Dress	pregr. Profile	Dress	finish Profile	Dress	finish Profile	sparkout Prf.	Step 1	Lead check	Index check
Feed [mm/Min]	2000	40	10	35	6000	40	8000	40	8000	40	8000	8000	30	2000	2000
tot. Incr./part.Pass	0/1	0.1/0.002	0/1	8/4	0.2/0.03	0.05/0.002	0.05/0.01	0.03/0.002	0.02/0.005	0.03/0.002	0.01/0.005	0.004/0.002	6/3		
Cutting speed [m/s]		10	20	20	20	10	20	10	20	10	20	20			
Used wheels		1	1	2	1	1	1	1	1	1	1	1	3		
Grinding time [s]	12	2057	164	2730	8421	1028	5474	617	4379	617	2189	2189	2951	55	169
Total cycle time	9 h 10 min 52 sec														

The cycle times are indicative. Material to be ground, grinding wheels, coolants can influence the cycle times considerably.

2. Used Grinding Wheels

1	DXF Ø150 D46
2	DXF Ø125 D126
3	1A1 Ø100 D64



3. Machine and Software Requirements

Machines: 5 axes CNC grinders : SIRIUS HPM
 Control: Fanuc 31i
 Accessories: Dogbone Dresser
 Responsible engineer: OP, 18.1.14

Coolant: Synthetic Oil, pressure 6 bar
 Software: Quinto 5

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